



SEQUENCE LISTING

<110> Spyridon Artavanis-Tsakonas
Huilin Qi
Matthew Rand

<120> ACTIVATED FORMS OF NOTCH AND METHODS
BASED THEREON

<130> 7326-132-999

<140> 10/781,059

<141> 2004-02-17

<150> 09/121,457

<151> 1998-07-23

<150> 08/899,232

<151> 1997-07-23

<160> 4

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 2471

<212> PRT

<213> Homo sapiens

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Glu	Pro	Cys	Val	Asn	Glu	Gly	Met	Cys	Val	Thr	Tyr	His	Asn	Gly	Thr
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Arg	Asp	Pro	Cys	Glu	Lys	Asn	Arg	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Val
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Ala	Gln	Ala	Met	Leu	Gly	Lys	Ala	Thr	Cys	Arg	Cys	Ala	Ser	Gly	Phe
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Thr	Gly	Glu	Asp	Cys	Gln	Tyr	Ser	Thr	Ser	His	Pro	Cys	Phe	Val	Ser
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Arg	Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	His	Met	Leu	Ser	Arg	Asp	Thr
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Tyr	Glu	Cys	Thr	Cys	Gln	Val	Gly	Phe	Thr	Gly	Lys	Glu	Cys	Gln	Trp
	130					135					140				
Thr	Asp	Ala	Cys	Leu	Ser	His	Pro	Cys	Ala	Asn	Gly	Ser	Thr	Cys	Thr
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Thr	Val	Ala	Asn	Gln	Phe	Ser	Cys	Lys	Cys	Leu	Thr	Gly	Phe	Thr	Gly
			165						170					175	
Gln	Lys	Cys	Glu	Thr	Asp	Val	Asn	Glu	Cys	Asp	Ile	Pro	Gly	His	Cys
			180					185					190		

Gln	His	Gly	Gly	Thr	Cys	Leu	Asn	Leu	Pro	Gly	Ser	Tyr	Gln	Cys	Gln
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Cys	Pro	Gln	Gly	Phe	Thr	Gly	Gln	Tyr	Cys	Asp	Ser	Leu	Tyr	Val	Pro
	210					215					220				
Cys	Ala	Pro	Ser	Pro	Cys	Val	Asn	Gly	Gly	Thr	Cys	Arg	Gln	Thr	Gly
225					230					235					240
Asp	Phe	Thr	Phe	Glu	Cys	Asn	Cys	Leu	Pro	Gly	Phe	Glu	Gly	Ser	Thr
				245					250					255	
Cys	Glu	Arg	Asn	Ile	Asp	Asp	Cys	Pro	Asn	His	Arg	Cys	Gln	Asn	Gly
			260					265					270		
Gly	Val	Cys	Val	Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Arg	Cys	Pro	Pro
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Gln	Trp	Thr	Gly	Gln	Phe	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Leu	Leu
	290					295					300				
Gln	Pro	Asn	Ala	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Ala	Asn	Arg	Asn	Gly
305					310					315					320
Gly	Tyr	Gly	Cys	Val	Cys	Val	Asn	Gly	Trp	Ser	Gly	Asp	Asp	Cys	Ser
				325					330					335	
Glu	Asn	Ile	Asp	Asp	Cys	Ala	Phe	Ala	Ser	Cys	Thr	Pro	Gly	Ser	Thr
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Cys	Ile	Asp	Arg	Val	Ala	Ser	Phe	Ser	Cys	Met	Cys	Pro	Glu	Gly	Lys
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Ala	Gly	Leu	Leu	Cys	His	Leu	Asp	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys
	370					375					380				
His	Lys	Gly	Ala	Leu	Cys	Asp	Thr	Asn	Pro	Leu	Asn	Gly	Gln	Tyr	Ile
385					390					395					400
Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Lys	Gly	Ala	Asp	Cys	Thr	Glu	Asp	Val
				405					410					415	
Asp	Glu	Cys	Ala	Met	Ala	Asn	Ser	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys
			420					425					430		
Cys	Val	Asn	Thr	Asp	Gly	Ala	Phe	His	Cys	Glu	Cys	Leu	Lys	Gly	Tyr
	435						440					445			
Ala	Gly	Pro	Arg	Cys	Glu	Met	Asp	Ile	Asn	Glu	Cys	His	Ser	Asp	Pro
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Cys	Gln	Asn	Asp	Ala	Thr	Cys	Leu	Asp	Lys	Ile	Gly	Gly	Phe	Thr	Cys
465					470					475					480
Leu	Cys	Met	Pro	Gly	Phe	Lys	Gly	Val	His	Cys	Glu	Leu	Glu	Ile	Asn
				485					490					495	
Glu	Cys	Gln	Ser	Asn	Pro	Cys	Val	Asn	Asn	Gly	Gln	Cys	Val	Asp	Lys
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Val	Asn	Arg	Phe	Gln	Cys	Leu	Cys	Pro	Pro	Gly	Phe	Thr	Gly	Pro	Val
	515						520					525			
Cys	Gln	Ile	Asp	Ile	Asp	Asp	Cys	Ser	Ser	Thr	Pro	Cys	Leu	Asn	Gly
	530					535					540				
Ala	Lys	Cys	Ile	Asp	His	Pro	Asn	Gly	Tyr	Glu	Cys	Gln	Cys	Ala	Thr
545					550					555					560
Gly	Phe	Thr	Gly	Val	Leu	Cys	Glu	Glu	Asn	Ile	Asp	Asn	Cys	Asp	Pro
				565					570					575	
Asp	Pro	Cys	His	Gly	Gln	Cys	Gln	Asp	Gly	Ile	Asp	Ser	Ser	Tyr	Thr
			580					585				590			
Cys	Ile	Cys	Asn	Pro	Gly	Tyr	Met	Gly	Ala	Ile	Cys	Ser	Asp	Gln	Ile
	595						600					605			
Asp	Glu	Cys	Tyr	Ser	Ser	Pro	Cys	Leu	Asn	Asp	Gly	Arg	Cys	Ile	Asp
	610					615					620				
Leu	Val	Asn	Gly	Tyr	Gln	Cys	Asn	Cys	Gln	Pro	Gly	Thr	Ser	Gly	Val

625	Asn	Cys	Glu	Ile	Asn	Phe	Asp	Asp	Cys	Ala	Ser	Asn	Pro	Cys	Ile	His
	Gly	Ile	Cys	Met	645	Gly	Ile	Asn	Arg	650	Ser	Cys	Val	Cys	Ser	Pro
	Gly	Phe	Thr	Gly	660	Gln	Arg	Cys	Asn	665	Ile	Asp	Glu	Cys	Ala	Ser
	Asn	Pro	Cys	Arg	675	Lys	Gly	Ala	Thr	680	Cys	Ile	Asn	Gly	Val	Asn
	Arg	Cys	Ile	Cys	690	Pro	Glu	Gly	Pro	695	His	His	Pro	Ser	Cys	Tyr
705	Val	Asn	Glu	Cys	710	Leu	Ser	Asn	Pro	715	Cys	Ile	His	Gly	Asn	Cys
	Gly	Leu	Ser	Gly	725	Tyr	Lys	Cys	Leu	730	Cys	Asp	Ala	Gly	Trp	Val
	Asn	Cys	Glu	Val	740	Asp	Lys	Asn	Glu	745	Cys	Leu	Ser	Asn	Pro	Cys
	Gly	Gly	Thr	Cys	755	Asp	Asn	Leu	Val	760	Asn	Gly	Tyr	Arg	Cys	Thr
	Lys	Gly	Phe	Lys	770	Gly	Tyr	Asn	Cys	775	Gln	Val	Asn	Ile	Asp	Glu
785	Ser	Asn	Pro	Cys	790	Leu	Asn	Gln	Gly	795	Thr	Cys	Phe	Asp	Asp	Ile
	Tyr	Thr	Cys	His	805	Cys	Val	Leu	Pro	810	Tyr	Thr	Gly	Lys	Asn	Cys
	Val	Leu	Ala	Pro	820	Cys	Ser	Pro	Asn	825	Pro	Cys	Glu	Asn	Ala	Ala
	Lys	Glu	Ser	Pro	835	Asn	Phe	Glu	Ser	840	Tyr	Thr	Cys	Leu	Cys	Ala
	Trp	Gln	Gly	Gln	850	Arg	Cys	Thr	Ile	855	Asp	Ile	Asp	Glu	Cys	Ile
865	Pro	Cys	Met	Asn	870	His	Gly	Leu	Cys	875	Asn	Thr	Gln	Gly	Ser	Tyr
	Cys	Glu	Cys	Pro	885	Pro	Gly	Phe	Ser	890	Met	Asp	Cys	Glu	Glu	Asp
	Asp	Asp	Cys	Leu	900	Ala	Asn	Pro	Cys	905	Gln	Asn	Gly	Gly	Ser	Cys
	Gly	Val	Asn	Thr	915	Phe	Ser	Cys	Leu	920	Cys	Leu	Pro	Gly	Phe	Thr
	Lys	Cys	Gln	Thr	930	Asp	Met	Asn	Glu	935	Cys	Leu	Ser	Glu	Pro	Cys
945	Gly	Gly	Thr	Cys	945	Ser	Asp	Tyr	Val	950	Asn	Ser	Tyr	Thr	Cys	Lys
	Ala	Gly	Phe	Asp	965	Gly	Val	His	Cys	970	Glu	Asn	Asn	Ile	Asn	Glu
	Glu	Ser	Ser	Cys	980	Phe	Asn	Gly	Gly	985	Thr	Cys	Val	Asp	Gly	Ile
	Phe	Ser	Cys	Leu	995	Cys	Pro	Val	Gly	1000	Phe	Thr	Gly	Ser	Phe	Cys
	Glu	Ile	Asn	Glu	1010	Cys	Ser	Ser	His	1015	Pro	Cys	Leu	Asn	Glu	Gly
1025	Val	Asp	Gly	Leu	1025	Thr	Tyr	Arg	Cys	1030	Ser	Cys	Pro	Leu	Gly	Thr
	Gly	Lys	Asn	Cys	1045	Gln	Thr	Leu	Val	1050	Asn	Leu	Cys	Ser	Arg	Ser
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																Cys

Lys Asn Lys Gly Thr Cys Val Gln Lys Lys Ala Glu Ser Gln Cys Leu
 1075 1080 1085
 Cys Pro Ser Gly Trp Ala Gly Ala Tyr Cys Asp Val Pro Asn Val Ser
 1090 1095 1100
 Cys Asp Ile Ala Ala Ser Arg Arg Gly Val Leu Val Glu His Leu Cys
 1105 1110 1115 1120
 Gln His Ser Gly Val Cys Ile Asn Ala Gly Asn Thr His Tyr Cys Gln
 1125 1130 1135
 Cys Pro Leu Gly Tyr Thr Gly Ser Tyr Cys Glu Glu Gln Leu Asp Glu
 1140 1145 1150
 Cys Ala Ser Asn Pro Cys Gln His Gly Ala Thr Cys Ser Asp Phe Ile
 1155 1160 1165
 Gly Gly Tyr Arg Cys Glu Cys Val Pro Gly Tyr Gln Gly Val Asn Cys
 1170 1175 1180
 Glu Tyr Glu Val Asp Glu Cys Gln Asn Gln Pro Cys Gln Asn Gly Gly
 1185 1190 1195 1200
 Thr Cys Ile Asp Leu Val Asn His Phe Lys Cys Ser Cys Pro Pro Gly
 1205 1210 1215
 Thr Arg Gly Leu Leu Cys Glu Glu Asn Ile Asp Asp Cys Ala Arg Gly
 1220 1225 1230
 Pro His Cys Leu Asn Gly Gly Gln Cys Met Asp Arg Ile Gly Gly Tyr
 1235 1240 1245
 Ser Cys Arg Cys Leu Pro Gly Phe Ala Gly Glu Arg Cys Glu Gly Asp
 1250 1255 1260
 Ile Asn Glu Cys Leu Ser Asn Pro Cys Ser Ser Glu Gly Ser Leu Asp
 1265 1270 1275 1280
 Cys Ile Gln Leu Thr Asn Asp Tyr Leu Cys Val Cys Arg Ser Ala Phe
 1285 1290 1295
 Thr Gly Arg His Cys Glu Thr Phe Val Asp Val Cys Pro Gln Met Pro
 1300 1305 1310
 Cys Leu Asn Gly Gly Thr Cys Ala Val Ala Ser Asn Met Pro Asp Gly
 1315 1320 1325
 Phe Ile Cys Arg Cys Pro Pro Gly Phe Ser Gly Ala Arg Cys Gln Ser
 1330 1335 1340
 Ser Cys Gly Gln Val Lys Cys Arg Lys Gly Glu Gln Cys Val His Thr
 1345 1350 1355 1360
 Ala Ser Gly Pro Arg Cys Phe Cys Pro Ser Pro Arg Asp Cys Glu Ser
 1365 1370 1375
 Gly Cys Ala Ser Ser Pro Cys Gln His Gly Gly Ser Cys His Pro Gln
 1380 1385 1390
 Arg Gln Pro Pro Tyr Tyr Ser Cys Gln Cys Ala Pro Pro Phe Ser Gly
 1395 1400 1405
 Ser Arg Cys Glu Leu Tyr Thr Ala Pro Pro Ser Thr Pro Pro Ala Thr
 1410 1415 1420
 Cys Leu Ser Gln Tyr Cys Ala Asp Lys Ala Arg Asp Gly Val Cys Asp
 1425 1430 1435 1440
 Glu Ala Cys Asn Ser His Ala Cys Gln Trp Asp Gly Gly Asp Cys Ser
 1445 1450 1455
 Leu Thr Met Glu Asn Pro Trp Ala Asn Cys Ser Ser Pro Leu Pro Cys
 1460 1465 1470
 Trp Asp Tyr Ile Asn Asn Gln Cys Asp Glu Leu Cys Asn Thr Val Glu
 1475 1480 1485
 Cys Leu Phe Asp Asn Phe Glu Cys Gln Gly Asn Ser Lys Thr Cys Lys
 1490 1495 1500
 Tyr Asp Lys Tyr Cys Ala Asp His Phe Lys Asp Asn His Cys Asn Gln

1505		1510		1515		1520
Gly Cys Asn Ser	Glu Glu Cys Gly Trp Asp	Gly Leu Asp Cys Ala Ala				
	1525	1530		1535		
Asp Gln Pro Glu Asn Leu Ala Glu Gly Thr Leu Val Ile Val Val Leu						
	1540	1545		1550		
Met Pro Pro Glu Gln Leu Leu Gln Asp Ala Arg Ser Phe Leu Arg Ala						
	1555	1560		1565		
Leu Gly Thr Leu Leu His Thr Asn Leu Arg Ile Lys Arg Asp Ser Gln						
	1570	1575		1580		
Gly Glu Leu Met Val Tyr Pro Tyr Tyr Gly Glu Lys Ser Ala Ala Met						
1585	1590	1595		1600		
Lys Lys Gln Arg Met Thr Arg Arg Ser Leu Pro Gly Glu Gln Glu Gln						
	1605	1610		1615		
Glu Val Ala Gly Ser Lys Val Phe Leu Glu Ile Asp Asn Arg Gln Cys						
	1620	1625		1630		
Val Gln Asp Ser Asp His Cys Phe Lys Asn Thr Asp Ala Ala Ala Ala						
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Leu Leu Ala Ser His Ala Ile Gln Gly Thr Leu Ser Tyr Pro Leu Val						
	1650	1655		1660		
Ser Val Val Ser Glu Ser Leu Thr Pro Glu Arg Thr Gln Leu Leu Tyr						
1665	1670	1675		1680		
Leu Leu Ala Val Ala Val Val Ile Ile Leu Phe Ile Ile Leu Leu Gly						
	1685	1690		1695		
Val Ile Met Ala Lys Arg Lys Arg Lys His Gly Ser Leu Trp Leu Pro						
	1700	1705		1710		
Glu Gly Phe Thr Leu Arg Arg Asp Ala Ser Asn His Lys Arg Arg Glu						
	1715	1720		1725		
Pro Val Gly Gln Asp Ala Val Gly Leu Lys Asn Leu Ser Val Gln Val						
	1730	1735		1740		
Ser Glu Ala Asn Leu Ile Gly Thr Gly Thr Ser Glu His Trp Val Asp						
1745	1750	1755		1760		
Asp Glu Gly Pro Gln Pro Lys Lys Val Lys Ala Glu Asp Glu Ala Leu						
	1765	1770		1775		
Leu Ser Glu Glu Asp Asp Pro Ile Asp Arg Arg Pro Trp Thr Gln Gln						
	1780	1785		1790		
His Leu Glu Ala Ala Asp Ile Arg Arg Thr Pro Ser Leu Ala Leu Thr						
	1795	1800		1805		
Pro Pro Gln Ala Glu Gln Glu Val Asp Val Leu Asp Val Asn Val Arg						
	1810	1815		1820		
Gly Pro Asp Gly Cys Thr Pro Leu Met Leu Ala Ser Leu Arg Gly Gly						
1825	1830	1835		1840		
Ser Ser Asp Leu Ser Asp Glu Asp Glu Asp Ala Glu Asp Ser Ser Ala						
	1845	1850		1855		
Asn Ile Ile Thr Asp Leu Val Tyr Gln Gly Ala Ser Leu Gln Ala Gln						
	1860	1865		1870		
Thr Asp Arg Thr Gly Glu Met Ala Leu His Leu Ala Ala Arg Tyr Ser						
	1875	1880		1885		
Arg Ala Asp Ala Ala Lys Arg Leu Leu Asp Ala Gly Ala Asp Ala Asn						
	1890	1895		1900		
Ala Gln Asp Asn Met Gly Arg Cys Pro Leu His Ala Ala Val Ala Ala						
1905	1910	1915		1920		
Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn Arg Val Thr Asp						
	1925	1930		1935		
Leu Asp Ala Arg Met Asn Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala						
	1940	1945		1950		

Arg Leu Ala Val Glu Gly Met Val Ala Glu Leu Ile Asn Cys Gln Ala
 1955 1960 1965
 Asp Val Asn Ala Val Asp Asp His Gly Lys Ser Ala Leu His Trp Ala
 1970 1975 1980
 Ala Ala Val Asn Asn Val Glu Ala Thr Leu Leu Leu Leu Lys Asn Gly
 1985 1990 1995 2000
 Ala Asn Arg Asp Met Gln Asp Asn Lys Glu Glu Thr Pro Leu Phe Leu
 2005 2010 2015
 Ala Ala Arg Glu Gly Ser Tyr Glu Ala Ala Lys Ile Leu Leu Asp His
 2020 2025 2030
 Phe Ala Asn Arg Asp Ile Thr Asp His Met Asp Arg Leu Pro Arg Asp
 2035 2040 2045
 Val Ala Arg Asp Arg Met His His Asp Ile Val Arg Leu Leu Asp Glu
 2050 2055 2060
 Tyr Asn Val Thr Pro Ser Pro Pro Gly Thr Val Leu Thr Ser Ala Leu
 2065 2070 2075 2080
 Ser Pro Val Ile Cys Gly Pro Asn Arg Ser Phe Leu Ser Leu Lys His
 2085 2090 2095
 Thr Pro Met Gly Lys Lys Ser Arg Arg Pro Ser Ala Lys Ser Thr Met
 2100 2105 2110
 Pro Thr Ser Leu Pro Asn Leu Ala Lys Glu Ala Lys Asp Ala Lys Gly
 2115 2120 2125
 Ser Arg Arg Lys Lys Ser Leu Ser Glu Lys Val Gln Leu Ser Glu Ser
 2130 2135 2140
 Ser Val Thr Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His Thr Tyr
 2145 2150 2155 2160
 Val Ser Asp Thr Thr Ser Ser Pro Met Ile Thr Ser Pro Gly Ile Leu
 2165 2170 2175
 Gln Ala Ser Pro Asn Pro Met Leu Ala Thr Ala Ala Pro Pro Ala Pro
 2180 2185 2190
 Val His Ala Gln His Ala Leu Ser Phe Ser Asn Leu His Glu Met Gln
 2195 2200 2205
 Pro Leu Ala His Gly Ala Ser Thr Val Leu Pro Ser Val Ser Gln Leu
 2210 2215 2220
 Leu Ser His His His Ile Val Ser Pro Gly Ser Gly Ser Ala Gly Ser
 2225 2230 2235 2240
 Leu Ser Arg Leu His Pro Val Pro Val Pro Ala Asp Trp Met Asn Arg
 2245 2250 2255
 Met Glu Val Asn Glu Thr Gln Tyr Asn Glu Met Phe Gly Met Val Leu
 2260 2265 2270
 Ala Pro Ala Glu Gly Thr His Pro Gly Ile Ala Pro Gln Ser Arg Pro
 2275 2280 2285
 Pro Glu Gly Lys His Ile Thr Thr Pro Arg Glu Pro Leu Pro Pro Ile
 2290 2295 2300
 Val Thr Phe Gln Leu Ile Pro Lys Gly Ser Ile Ala Gln Pro Ala Gly
 2305 2310 2315 2320
 Ala Pro Gln Pro Gln Ser Thr Cys Pro Pro Ala Val Ala Gly Pro Leu
 2325 2330 2335
 Pro Thr Met Tyr Gln Ile Pro Glu Met Ala Arg Leu Pro Ser Val Ala
 2340 2345 2350
 Phe Pro Thr Ala Met Met Pro Gln Gln Asp Gly Gln Val Ala Gln Thr
 2355 2360 2365
 Ile Leu Pro Ala Tyr His Pro Phe Pro Ala Ser Val Gly Lys Tyr Pro
 2370 2375 2380
 Thr Pro Pro Ser Gln His Ser Tyr Ala Ser Ser Asn Ala Ala Glu Arg

2385		2390		2395		2400									
Thr	Pro	Ser	His	Ser	Gly	His	Leu	Gln	Gly	Glu	His	Pro	Tyr	Leu	Thr
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Pro	Ser	Pro	Glu	Ser	Pro	Asp	Gln	Trp	Ser	Ser	Ser	Ser	Pro	His	Ser
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Ala	Ser	Asp	Trp	Ser	Asp	Val	Thr	Thr	Ser	Pro	Thr	Pro	Gly	Gly	Ala
				2435					2440					2445	
Gly	Gly	Gly	Gln	Arg	Gly	Pro	Gly	Thr	His	Met	Ser	Glu	Pro	Pro	His
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			20					25					30		
Asn	Gly	Gly	Lys	Cys	Glu	Ala	Ala	Asn	Gly	Thr	Glu	Ala	Cys	Val	Cys
		35					40					45			
Gly	Gly	Ala	Phe	Val	Gly	Pro	Arg	Cys	Gln	Asp	Pro	Asn	Pro	Cys	Leu
	50				55					60					
Ser	Thr	Pro	Cys	Lys	Asn	Ala	Gly	Thr	Cys	His	Val	Val	Asp	Arg	Arg
65				70					75					80	
Gly	Val	Ala	Asp	Tyr	Ala	Cys	Ser	Cys	Ala	Leu	Gly	Phe	Ser	Gly	Pro
			85					90						95	
Leu	Cys	Leu	Thr	Pro	Leu	Asp	Asn	Ala	Cys	Leu	Thr	Asn	Pro	Cys	Arg
		100					105						110		
Asn	Gly	Gly	Thr	Cys	Asp	Leu	Leu	Thr	Leu	Thr	Glu	Tyr	Lys	Cys	Arg
		115				120						125			
Cys	Pro	Pro	Gly	Trp	Ser	Gly	Lys	Ser	Cys	Gln	Gln	Ala	Asp	Pro	Cys
		130				135					140				
Ala	Ser	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Gln	Cys	Leu	Pro	Phe	Glu	Ala
145				150					155					160	
Ser	Tyr	Ile	Cys	His	Cys	Pro	Pro	Ser	Phe	His	Gly	Pro	Thr	Cys	Trp
			165					170						175	
Gln	Asp	Val	Asn	Glu	Cys	Gly	Gln	Lys	Pro	Arg	Leu	Cys	Arg	His	Gly

			180					185					190				
Gly	Thr	Cys	His	Asn	Glu	Val	Gly	Ser	Tyr	Arg	Cys	Val	Cys	Arg	Ala		
		195					200					205					
Thr	His	Thr	Gly	Pro	Asn	Cys	Glu	Trp	Pro	Tyr	Val	Pro	Cys	Ser	Pro		
	210					215						220					
Ser	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Arg	Pro	Thr	Gly	Asp	Val	Thr		
225				230					235					240			
His	Glu	Cys	Ala	Cys	Leu	Pro	Gly	Phe	Thr	Gly	Gln	Asn	Cys	Glu	Glu		
			245					250						255			
Asn	Ile	Asp	Asp	Cys	Pro	Gly	Asn	Asn	Cys	Lys	Asn	Gly	Gly	Ala	Cys		
		260					265					270					
Val	Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Pro	Cys	Pro	Pro	Glu	Trp	Thr		
	275						280					285					
Gly	Gln	Tyr	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Gln	Leu	Met	Pro	Asn		
	290					295					300						
Ala	Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Asn	Thr	His	Gly	Gly	Tyr	Asn		
305				310					315					320			
Cys	Val	Cys	Val	Asn	Gly	Trp	Thr	Gly	Glu	Asp	Cys	Ser	Glu	Asn	Ile		
			325					330						335			
Asp	Asp	Cys	Ala	Ser	Ala	Ala	Cys	Phe	His	Gly	Ala	Thr	Cys	His	Asp		
		340					345					350					
Arg	Val	Ala	Ser	Phe	Tyr	Cys	Glu	Cys	Pro	His	Gly	Arg	Thr	Gly	Leu		
	355						360					365					
Leu	Cys	His	Leu	Asn	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys	Asn	Glu	Gly		
	370			375							380						
Ser	Asn	Cys	Asp	Thr	Asn	Pro	Val	Asn	Gly	Lys	Ala	Ile	Cys	Thr	Cys		
385				390					395					400			
Pro	Ser	Gly	Tyr	Thr	Gly	Pro	Ala	Cys	Ser	Gln	Asp	Val	Asp	Glu	Cys		
			405					410					415				
Ser	Leu	Gly	Ala	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys	Cys	Ile	Asn	Thr		
	420						425						430				
Leu	Gly	Ser	Phe	Glu	Cys	Gln	Cys	Leu	Gln	Gly	Tyr	Thr	Gly	Pro	Arg		
	435					440						445					
Cys	Glu	Ile	Asp	Val	Asn	Glu	Cys	Val	Ser	Asn	Pro	Cys	Gln	Asn	Asp		
	450					455					460						
Ala	Thr	Cys	Leu	Asp	Gln	Ile	Gly	Glu	Phe	Gln	Cys	Met	Cys	Met	Pro		
465				470					475					480			
Gly	Tyr	Glu	Gly	Val	His	Cys	Glu	Val	Asn	Thr	Asp	Glu	Cys	Ala	Ser		
			485					490						495			
Ser	Pro	Cys	Leu	His	Asn	Gly	Arg	Cys	Leu	Asp	Lys	Ile	Asn	Glu	Phe		
		500					505					510					
Gln	Cys	Glu	Cys	Pro	Thr	Gly	Phe	Thr	Gly	His	Leu	Cys	Gln	Tyr	Asp		
	515					520						525					
Val	Asp	Glu	Cys	Ala	Ser	Thr	Pro	Cys	Lys	Asn	Gly	Ala	Lys	Cys	Leu		
	530					535					540						
Asp	Gly	Pro	Asn	Thr	Tyr	Thr	Cys	Val	Cys	Thr	Glu	Gly	Tyr	Thr	Gly		
545				550					555					560			
Thr	His	Cys	Glu	Val	Asp	Ile	Asp	Glu	Cys	Asp	Pro	Asp	Pro	Cys	His		
			565					570						575			
Tyr	Gly	Ser	Cys	Lys	Asp	Gly	Val	Ala	Thr	Phe	Thr	Cys	Leu	Cys	Arg		
		580					585					590					
Pro	Gly	Tyr	Thr	Gly	His	His	Cys	Glu	Thr	Asn	Ile	Asn	Glu	Cys	Ser		
	595					600					605						
Ser	Gln	Pro	Cys	Arg	Leu	Trp	Gly	Thr	Cys	Gln	Asp	Pro	Asp	Asn	Ala		
	610				615						620						

Tyr	Leu	Cys	Phe	Cys	Leu	Lys	Gly	Thr	Thr	Gly	Pro	Asn	Cys	Glu	Ile	625	630	635	640
Asn	Leu	Asp	Asp	Cys	Ala	Ser	Ser	Pro	Cys	Asp	Ser	Gly	Thr	Cys	Leu	645	650	655	660
Asp	Lys	Ile	Asp	Gly	Tyr	Glu	Cys	Ala	Cys	Glu	Pro	Gly	Tyr	Thr	Gly	665	670	675	680
Ser	Met	Cys	Asn	Ser	Asn	Ile	Asp	Glu	Cys	Ala	Gly	Asn	Pro	Cys	His	685	690	695	700
Asn	Gly	Gly	Thr	Cys	Glu	Asp	Gly	Ile	Asn	Gly	Phe	Thr	Cys	Arg	Cys	705	710	715	720
Pro	Glu	Gly	Tyr	His	Asp	Pro	Thr	Cys	Leu	Ser	Glu	Val	Asn	Glu	Cys	725	730	735	740
Asn	Ser	Asn	Pro	Cys	Val	His	Gly	Ala	Cys	Trp	Asp	Ser	Leu	Asn	Gly	745	750	755	760
Tyr	Lys	Cys	Asp	Cys	Asp	Pro	Gly	Trp	Ser	Gly	Thr	Asn	Cys	Asp	Ile	765	770	775	780
Asn	Asn	Asn	Glu	Cys	Glu	Ser	Asn	Pro	Cys	Val	Asn	Gly	Gly	Thr	Cys	785	790	795	800
Lys	Asp	Met	Thr	Ser	Gly	Ile	Val	Cys	Thr	Cys	Trp	Glu	Gly	Phe	Ser	805	810	815	820
Gly	Pro	Asn	Cys	Gln	Thr	Asn	Ile	Asn	Glu	Cys	Ala	Ser	Asn	Pro	Cys	825	830	835	840
Leu	Asn	Lys	Gly	Thr	Cys	Ile	Asp	Asp	Val	Ala	Gly	Tyr	Lys	Cys	Asn	845	850	855	860
Cys	Leu	Leu	Pro	Tyr	Thr	Gly	Ala	Thr	Cys	Glu	Val	Val	Leu	Ala	Pro	865	870	875	880
Cys	Ala	Pro	Ser	Pro	Cys	Arg	Asn	Gly	Gly	Glu	Cys	Arg	Gln	Ser	Glu	885	890	895	900
Asp	Tyr	Glu	Ser	Phe	Ser	Cys	Val	Cys	Pro	Thr	Ala	Gly	Ala	Lys	Gly	905	910	915	920
Gln	Thr	Cys	Glu	Val	Asp	Ile	Asn	Glu	Cys	Val	Leu	Ser	Pro	Cys	Trp	925	930	935	940
His	Gly	Ala	Ser	Cys	Gln	Asn	Thr	His	Gly	Xaa	Tyr	Arg	Cys	His	Cys	945	950	955	960
Gln	Ala	Gly	Tyr	Ser	Gly	Arg	Asn	Cys	Glu	Thr	Asp	Ile	Asp	Asp	Cys	965	970	975	980
Trp	Pro	Asn	Pro	Cys	His	Asn	Gly	Ser	Cys	Thr	Asp	Gly	Ile	Asn	985	990	995	1000	
Thr	Ala	Phe	Cys	Asp	Cys	Leu	Pro	Gly	Phe	Trp	Gly	Thr	Phe	Cys	Glu	1005	1010	1015	1020
Glu	Asp	Ile	Asn	Glu	Cys	Ala	Ser	Asp	Pro	Cys	Arg	Asn	Gly	Ala	Asn	1025	1030	1035	1040
Cys	Thr	Asp	Cys	Val	Asp	Ser	Tyr	Thr	Cys	Thr	Cys	Pro	Ala	Gly	Phe	1045	1050	1055	1060
Ser	Gly	Ile	His	Cys	Glu	Asn	Asn	Thr	Pro	Asp	Cys	Thr	Glu	Ser	Ser	1065	1070	1075	1080
Cys	Phe	Asn	Gly	Gly	Thr	Cys	Val	Asp	Gly	Ile	Asn	Ser	Phe	Thr	Cys	1085	1090	1095	1100
Leu	Cys	Pro	Pro	Gly	Phe	Thr	Gly	Ser	Tyr	Cys	Gln	His	Val	Val	Asn	1105	1110	1115	1120
Glu	Cys	Asp	Ser	Arg	Pro	Cys	Leu	Leu	Gly	Gly	Thr	Cys	Gln	Asp	Gly	1125	1130	1135	1140
Arg	Gly	Leu	His	Arg	Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Thr	Gly	Pro	Asn	1145	1150	1155	1160
Cys	Gln	Asn	Leu	Val	His	Trp	Cys	Asp	Ser	Ser	Pro	Cys	Lys	Asn	Gly	1165	1170	1175	1180

His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp Gly Phe	1505	1510	1515	1520
Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn Pro Leu Tyr Asp Gln Tyr	1525	1530	1535	
Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys Asn Ser	1540	1545	1550	
Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val Pro Glu	1555	1560	1565	
Arg Leu Ala Ala Gly Thr Leu Val Val Val Val Leu Met Pro Pro Glu	1570	1575	1580	
Gln Leu Arg Asn Ser Ser Phe His Phe Leu Trp Glu Leu Ser Arg Val	1585	1590	1595	1600
Leu His Thr Asn Val Val Phe Lys Arg Asp Ala His Gly Gln Gln Met	1605	1610	1615	
Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu Leu Arg Lys His Pro Ile	1620	1625	1630	
Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro Asp Ala Leu Leu Gly Gln	1635	1640	1645	
Val Lys Ala Ser Leu Leu Pro Gly Gly Ser Glu Gly Gly Trp Trp Trp	1650	1655	1660	
Arg Glu Leu Asp Pro Met Asp Val Arg Gly Ser Ile Val Tyr Leu Glu	1665	1670	1675	1680
Ile Asp Asn Trp Gln Cys Val Gln Ala Ser Ser Gln Cys Phe Gln Ser	1685	1690	1695	
Ala Thr Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser	1700	1705	1710	
Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val Gln Ser Glu Thr Val Glu	1715	1720	1725	
Pro Pro Pro Pro Ala Gln Leu His Phe Met Tyr Val Ala Ala Ala Ala	1730	1735	1740	
Phe Val Leu Leu Phe Phe Val Gly Cys Gly Val Leu Leu Ser Arg Lys	1745	1750	1755	1760
Arg Trp Xaa Gln His Gly Gln Leu Trp Phe Pro Glu Gly Phe Lys Val	1765	1770	1775	
Ser Glu Ala Ser Lys Lys Lys Trp Trp Glu Xaa Leu Gly Glu Asp Ser	1780	1785	1790	
Val Gly Leu Lys Pro Leu Lys Asn Ala Ser Asp Gly Ala Leu Met Asp	1795	1800	1805	
Asp Asn Gln Asn Glu Trp Gly Asp Glu Asp Leu Glu Thr Lys Lys Phe	1810	1815	1820	
Trp Phe Glu Glu Pro Val Val Leu Pro Asp Leu Asp Asp Gln Thr Asp	1825	1830	1835	1840
His Trp Gln Trp Thr Gln Gln His Leu Asp Ala Ala Asp Leu Arg Met	1845	1850	1855	
Ser Ala Met Ala Pro Thr Pro Pro Gln Gly Glu Val Asp Ala Asp Cys	1860	1865	1870	
Met Asp Val Asn Val Arg Gly Pro Asp Gly Phe Thr Pro Leu Met Ile	1875	1880	1885	
Ala Ser Cys Ser Gly Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu	1890	1895	1900	
Glu Asp Ala Pro Ala Val Ile Ser Asp Phe Ile Tyr Gln Gly Ala Ser	1905	1910	1915	1920
Leu His Asn Gln Thr Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala	1925	1930	1935	
Ala Arg Tyr Ser Arg Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser				

	1940	1945	1950
Ala Asp	Ala Asn Ile Gln Asp	Asn Met Gly Arg Thr	Pro Leu His Ala
	1955	1960	1965
Ala Val	Ser Ala Asp Ala Gln Gly Val	Phe Gln Ile Leu Ile Trp Asn	
	1970	1975	1980
Arg Ala	Thr Asp Leu Asp Ala Arg Met	His Asp Gly Thr Thr Pro Leu	
1985		1990	1995
Ile Leu	Ala Ala Arg Leu Ala Val Glu	Gly Met Leu Glu Asp Leu Ile	
	2005	2010	2015
Asn Ser	His Ala Asp Val Asn Ala Val	Asp Asp Leu Gly Lys Ser Ala	
	2020	2025	2030
Leu His	Trp Ala Ala Ala Val Asn Asn	Val Asp Ala Ala Val Val Leu	
	2035	2040	2045
Leu Lys	Asn Gly Ala Asn Lys Asp Met	Gln Asn Asn Arg Glu Glu Thr	
2050		2055	2060
Pro Leu	Phe Leu Ala Ala Trp Glu Gly	Ser Tyr Glu Thr Ala Lys Val	
2065		2070	2075
Leu Leu	Asp His Phe Ala Asn Trp Asp	Ile Thr Asp His Met Asp Arg	
	2085	2090	2095
Leu Pro	Arg Asp Ile Ala Gln Glu Arg	Met His His Asp Ile Val Arg	
	2100	2105	2110
Leu Leu	Asp Glu Tyr Asn Leu Val Arg	Ser Pro Gln Leu His Gly Ala	
	2115	2120	2125
Pro Leu	Gly Gly Thr Pro Thr Leu Ser	Pro Pro Leu Cys Ser Pro Asn	
	2130	2135	2140
Gly Tyr	Leu Gly Ser Leu Lys Pro Gly	Val Gln Gly Lys Lys Val Arg	
2145		2150	2155
Lys Pro	Ser Ser Lys Gly Leu Ala Cys	Gly Ser Lys Glu Ala Lys Asp	
	2165	2170	2175
Leu Lys	Ala Trp Arg Lys Lys Ser Gln	Asp Gly Lys Gly Cys Leu Leu	
	2180	2185	2190
Asp Ser	Ser Gly Met Leu Ser Pro Val	Asp Ser Leu Glu Ser Pro His	
	2195	2200	2205
Gly Tyr	Leu Ser Asp Val Ala Ser Pro	Pro Leu Leu Pro Ser Pro Phe	
	2210	2215	2220
Gln Gln	Ser Pro Ser Val Pro Leu Asn	His Leu Pro Gly Met Pro Asp	
2225		2230	2235
Thr His	Leu Gly Ile Gly His Leu Asn	Val Ala Ala Lys Pro Glu Met	
	2245	2250	2255
Ala Ala	Leu Gly Gly Gly Trp Leu Ala	Phe Glu Thr Gly Pro Pro	
	2260	2265	2270
Arg Leu	Ser His Leu Pro Val Ala Ser	Gly Thr Ser Thr Val Leu Gly	
	2275	2280	2285
Ser Ser	Ser Gly Gly Ala Leu Asn Phe	Thr Val Gly Gly Ser Thr Ser	
	2290	2295	2300
Leu Asn	Gly Gln Cys Glu Trp Leu Ser	Trp Leu Gln Ser Gly Met Val	
2305		2310	2315
Pro Asn	Gln Tyr Asn Pro Leu Trp Gly	Ser Val Ala Pro Gly Pro Leu	
	2325	2330	2335
Ser Thr	Gln Ala Pro Ser Leu Gln His	Gly Met Val Gly Pro Leu His	
	2340	2345	2350
Ser Ser	Leu Ala Ala Ser Ala Leu Ser	Gln Met Met Ser Tyr Gln Gly	
	2355	2360	2365
Leu Pro	Ser Thr Trp Leu Ala Thr Gln	Pro His Leu Val Gln Thr Gln	
	2370	2375	2380

Gln Val Gln Pro Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro
 2385 2390 2395 2400
 Ala Asn Ile Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro
 2405 2410 2415
 Gln Pro His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Trp
 2420 2425 2430
 Ser Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val Gln Pro Leu Gly
 2435 2440 2445
 Pro Ser Ser Leu Ala Val His Thr Ile Leu Pro Gln Glu Ser Pro Ala
 2450 2455 2460
 Leu Pro Thr Ser Leu Pro Ser Ser Leu Val Pro Pro Val Thr Ala Ala
 2465 2470 2475 2480
 Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser Pro Val Glu
 2485 2490 2495
 Asn Thr Pro Ser His Gln Leu Gln Val Pro Glu His Pro Phe Leu Thr
 2500 2505 2510
 Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser
 2515 2520 2525
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 2530 2535 2540
 Gln Ser Gln Ile Ala Arg Ile Pro Glu Ala Phe Lys
 2545 2550 2555

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 Thr Gln Gly Leu Arg Cys Thr Gln Thr Ala Glu Met Cys Leu Asn Gly
 20 25 30
 Gly Arg Cys Glu Met Thr Pro Gly Gly Thr Gly Val Cys Leu Cys Gly
 35 40 45
 Asn Leu Tyr Phe Gly Glu Arg Cys Gln Phe Pro Asn Pro Cys Thr Ile
 50 55 60
 Lys Asn Gln Cys Met Asn Phe Gly Thr Cys Glu Pro Val Leu Gln Gly
 65 70 75 80
 Asn Ala Ile Asp Phe Ile Cys His Cys Pro Val Gly Phe Thr Asp Lys
 85 90 95
 Val Cys Leu Thr Pro Val Asp Asn Ala Cys Val Asn Asn Pro Cys Arg
 100 105 110
 Asn Gly Gly Thr Cys Glu Leu Leu Asn Ser Val Thr Glu Tyr Lys Cys
 115 120 125
 Arg Cys Pro Pro Gly Trp Thr Gly Asp Ser Cys Gln Gln Ala Asp Pro
 130 135 140
 Cys Ala Ser Asn Pro Cys Ala Asn Gly Gly Lys Cys Leu Pro Phe Glu
 145 150 155 160
 Ile Gln Tyr Ile Cys Lys Cys Pro Pro Gly Phe His Gly Ala Thr Cys
 165 170 175
 Lys Gln Asp Ile Asn Glu Cys Ser Gln Asn Pro Cys Lys Asn Gly Gly
 180 185 190
 Gln Cys Ile Asn Glu Phe Gly Ser Tyr Arg Cys Thr Cys Gln Asn Arg

Ile	Asp	Asp	Cys	Ala	Ser	Asn	Leu	Cys	Asp	Asn	Gly	Lys	Cys	Ile	Asp	
				645					650					655		
Lys	Ile	Asp	Gly	Tyr	Glu	Cys	Thr	Cys	Glu	Pro	Gly	Tyr	Thr	Gly	Lys	
			660					665					670			
Leu	Cys	Asn	Ile	Asn	Ile	Asn	Glu	Cys	Asp	Ser	Asn	Pro	Cys	Arg	Asn	
		675					680					685				
Gly	Gly	Thr	Cys	Lys	Asp	Gln	Ile	Asn	Gly	Phe	Thr	Cys	Val	Cys	Pro	
	690					695				700						
Asp	Gly	Tyr	His	Asp	His	Met	Cys	Leu	Ser	Glu	Val	Asn	Glu	Cys	Asn	
705					710					715					720	
Ser	Asn	Pro	Cys	Ile	His	Gly	Ala	Cys	His	Asp	Gly	Val	Asn	Gly	Tyr	
				725					730					735		
Lys	Cys	Asp	Cys	Glu	Ala	Gly	Trp	Ser	Gly	Ser	Asn	Cys	Asp	Ile	Asn	
			740					745					750			
Asn	Asn	Glu	Cys	Glu	Ser	Asn	Pro	Cys	Met	Asn	Gly	Gly	Thr	Cys	Lys	
		755					760					765				
Asp	Met	Thr	Gly	Ala	Tyr	Ile	Cys	Thr	Cys	Lys	Ala	Gly	Phe	Ser	Gly	
	770					775					780					
Pro	Asn	Cys	Gln	Thr	Asn	Ile	Asn	Glu	Cys	Ser	Ser	Asn	Pro	Cys	Leu	
785					790					795					800	
Asn	His	Gly	Thr	Cys	Ile	Asp	Asp	Val	Ala	Gly	Tyr	Lys	Cys	Asn	Cys	
				805					810					815		
Met	Leu	Pro	Tyr	Thr	Gly	Ala	Ile	Cys	Glu	Ala	Val	Leu	Ala	Pro	Cys	
			820					825					830			
Ala	Gly	Ser	Pro	Cys	Lys	Asn	Gly	Gly	Arg	Cys	Lys	Glu	Ser	Glu	Asp	
		835					840					845				
Phe	Glu	Thr	Phe	Ser	Cys	Glu	Cys	Pro	Pro	Gly	Trp	Gln	Gly	Gln	Thr	
	850					855					860					
Cys	Glu	Ile	Asp	Met	Asn	Glu	Cys	Val	Asn	Arg	Pro	Cys	Arg	Asn	Gly	
865					870					875					880	
Ala	Thr	Cys	Gln	Asn	Thr	Asn	Gly	Ser	Tyr	Lys	Cys	Asn	Cys	Lys	Pro	
				885					890					895		
Gly	Tyr	Thr	Gly	Arg	Asn	Cys	Glu	Met	Asp	Ile	Asp	Asp	Cys	Gln	Pro	
			900					905					910			
Asn	Pro	Cys	His	Asn	Gly	Gly	Ser	Cys	Ser	Asp	Gly	Ile	Asn	Met	Phe	
		915					920					925				
Phe	Cys	Asn	Cys	Pro	Ala	Gly	Phe	Arg	Gly	Pro	Lys	Cys	Glu	Glu	Asp	
		930				935					940					
Ile	Asn	Glu	Cys	Ala	Ser	Asn	Pro	Cys	Lys	Asn	Gly	Ala	Asn	Cys	Thr	
945					950					955					960	
Asp	Cys	Val	Asn	Ser	Tyr	Thr	Cys	Thr	Cys	Gln	Pro	Gly	Phe	Ser	Gly	
				965					970					975		
Ile	His	Cys	Glu	Ser	Asn	Thr	Pro	Asp	Cys	Thr	Glu	Ser	Ser	Cys	Phe	
			980					985					990			
Asn	Gly	Gly	Thr	Cys	Ile	Asp	Gly	Ile	Asn	Thr	Phe	Thr	Cys	Gln	Cys	
		995					1000					1005				
Pro	Pro	Gly	Phe	Thr	Gly	Ser	Tyr	Cys	Gln	His	Asp	Ile	Asn	Glu	Cys	
		1010				1015					1020					
Asp	Ser	Lys	Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Gln	Asp	Ser	Tyr	Gly	
1025					1030					1035					1040	
Thr	Tyr	Lys	Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Thr	Gly	Leu	Asn	Cys	Gln	
				1045					1050					1055		
Asn	Leu	Val	Arg	Trp	Cys	Asp	Ser	Ser	Pro	Cys	Lys	Asn	Gly	Gly	Lys	
			1060					1065					1070			
Cys	Trp	Gln	Thr	Asn	Asn	Phe	Tyr	Arg	Cys	Glu	Cys	Lys	Ser	Gly	Trp	

1075					1080					1085					
Thr	Gly	Val	Tyr	Cys	Asp	Val	Pro	Ser	Val	Ser	Cys	Glu	Val	Ala	Ala
1090					1095					1100					
Lys	Gln	Gln	Gly	Val	Asp	Ile	Val	His	Leu	Cys	Arg	Asn	Ser	Gly	Met
1105					1110					1115					1120
Cys	Val	Asp	Thr	Gly	Asn	Thr	His	Phe	Cys	Arg	Cys	Gln	Ala	Gly	Tyr
				1125					1130					1135	
Thr	Gly	Ser	Tyr	Cys	Glu	Glu	Gln	Val	Asp	Glu	Cys	Ser	Pro	Asn	Pro
				1140					1145				1150		
Cys	Gln	Asn	Gly	Ala	Thr	Cys	Thr	Asp	Tyr	Leu	Gly	Gly	Tyr	Ser	Cys
				1155					1160			1165			
Glu	Cys	Val	Ala	Gly	Tyr	His	Gly	Val	Asn	Cys	Ser	Glu	Glu	Ile	Asn
				1170					1175			1180			
Glu	Cys	Leu	Ser	His	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Ile	Asp	Leu
1185					1190				1195			1200			
Ile	Asn	Thr	Tyr	Lys	Cys	Ser	Cys	Pro	Arg	Gly	Thr	Gln	Gly	Val	His
				1205					1210			1215			
Cys	Glu	Ile	Asn	Val	Asp	Asp	Cys	Thr	Pro	Phe	Tyr	Asp	Ser	Phe	Thr
				1220					1225			1230			
Leu	Glu	Pro	Lys	Cys	Phe	Asn	Asn	Gly	Lys	Cys	Ile	Asp	Arg	Val	Gly
				1235					1240			1245			
Gly	Tyr	Asn	Cys	Ile	Cys	Pro	Pro	Gly	Phe	Val	Gly	Glu	Arg	Cys	Glu
				1250					1255			1260			
Gly	Asp	Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Asp	Ser	Arg	Gly	Thr
1265					1270				1275			1280			
Gln	Asn	Cys	Ile	Gln	Leu	Val	Asn	Asp	Tyr	Arg	Cys	Glu	Cys	Arg	Gln
				1285					1290			1295			
Gly	Phe	Thr	Gly	Arg	Arg	Cys	Glu	Ser	Val	Val	Asp	Gly	Cys	Lys	Gly
				1300					1305			1310			
Met	Pro	Cys	Arg	Asn	Gly	Gly	Thr	Cys	Ala	Val	Ala	Ser	Asn	Thr	Glu
				1315					1320			1325			
Arg	Gly	Phe	Ile	Cys	Lys	Cys	Pro	Pro	Gly	Phe	Asp	Gly	Ala	Thr	Cys
				1330					1335			1340			
Glu	Tyr	Asp	Ser	Arg	Thr	Cys	Ser	Asn	Leu	Arg	Cys	Gln	Asn	Gly	Gly
1345					1350				1355			1360			
Thr	Cys	Ile	Ser	Val	Leu	Thr	Ser	Ser	Lys	Cys	Val	Cys	Ser	Glu	Gly
				1365					1370			1375			
Tyr	Thr	Gly	Ala	Thr	Cys	Gln	Tyr	Pro	Val	Ile	Ser	Pro	Cys	Ala	Ser
				1380					1385			1390			
His	Pro	Cys	Tyr	Asn	Gly	Gly	Thr	Cys	Gln	Phe	Phe	Ala	Glu	Glu	Pro
				1395					1400			1405			
Phe	Phe	Gln	Cys	Phe	Cys	Pro	Lys	Asn	Phe	Asn	Gly	Leu	Phe	Cys	His
				1410					1415			1420			
Ile	Leu	Asp	Tyr	Glu	Phe	Pro	Gly	Gly	Leu	Gly	Lys	Asn	Ile	Thr	Pro
1425					1430				1435			1440			
Pro	Asp	Asn	Asp	Asp	Ile	Cys	Glu	Asn	Glu	Gln	Cys	Ser	Glu	Leu	Ala
				1445					1450			1455			
Asp	Asn	Lys	Val	Cys	Asn	Ala	Asn	Cys	Asn	Asn	His	Ala	Cys	Gly	Trp
				1460					1465			1470			
Asp	Gly	Gly	Asp	Cys	Ser	Leu	Asn	Phe	Asn	Asp	Pro	Trp	Lys	Asn	Cys
				1475					1480			1485			
Thr	Gln	Ser	Leu	Gln	Cys	Trp	Lys	Tyr	Phe	Asn	Asp	Gly	Lys	Cys	Asp
				1490					1495			1500			
Ser	Gln	Cys	Asn	Asn	Thr	Gly	Cys	Leu	Tyr	Asp	Gly	Phe	Asp	Cys	Gln
1505					1510				1515			1520			

Lys Val Glu Val Gln Cys Asn Pro Leu Tyr Asp Gln Tyr Cys Lys Asp
 1525 1530 1535
 His Phe Gln Asp Gly His Cys Asp Gln Gly Cys Asn Asn Ala Glu Cys
 1540 1545 1550
 Glu Trp Asp Gly Leu Asp Cys Ala Asn Met Pro Glu Asn Leu Ala Glu
 1555 1560 1565
 Gly Thr Leu Val Leu Val Val Leu Met Pro Pro Glu Arg Leu Lys Asn
 1570 1575 1580
 Asn Ser Val Asn Phe Leu Arg Glu Leu Ser Arg Val Leu His Thr Asn
 1585 1590 1595 1600
 Val Val Phe Lys Lys Asp Ser Lys Gly Glu Tyr Lys Ile Tyr Pro Tyr
 1605 1610 1615
 Tyr Gly Asn Glu Glu Leu Lys Lys His His Ile Lys Arg Ser Thr
 1620 1625 1630
 Asp Tyr Trp Ser Asp Ala Pro Ser Ala Ile Phe Ser Thr Met Lys Glu
 1635 1640 1645
 Ser Ile Leu Leu Gly Arg His Arg Arg Glu Leu Asp Glu Met Glu Val
 1650 1655 1660
 Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Tyr Lys
 1665 1670 1675 1680
 Ser Ser Ser Gln Cys Phe Asn Ser Ala Thr Asp Val Ala Ala Phe Leu
 1685 1690 1695
 Gly Ala Leu Ala Ser Leu Gly Ser Leu Asp Thr Leu Ser Tyr Lys Ile
 1700 1705 1710
 Glu Ala Val Lys Ser Glu Asn Met Glu Thr Pro Lys Pro Ser Thr Leu
 1715 1720 1725
 Tyr Pro Met Leu Ser Met Leu Val Ile Pro Leu Leu Ile Ile Phe Val
 1730 1735 1740
 Phe Met Met Val Ile Val Asn Lys Lys Arg Arg Arg Glu His Asp Ser
 1745 1750 1755 1760
 Phe Gly Ser Pro Thr Ala Leu Phe Gln Lys Asn Pro Ala Lys Arg Asn
 1765 1770 1775
 Gly Glu Thr Pro Trp Glu Asp Ser Val Gly Leu Lys Pro Ile Lys Asn
 1780 1785 1790
 Met Thr Asp Gly Ser Phe Met Asp Asp Asn Gln Asn Glu Trp Gly Asp
 1795 1800 1805
 Glu Glu Thr Leu Glu Asn Lys Arg Phe Arg Phe Glu Glu Gln Val Ile
 1810 1815 1820
 Leu Pro Glu Leu Val Asp Asp Lys Thr Asp Pro Arg Gln Trp Thr Arg
 1825 1830 1835 1840
 Gln His Leu Asp Ala Ala Asp Leu Arg Ile Ser Ser Met Ala Pro Thr
 1845 1850 1855
 Pro Pro Gln Gly Glu Ile Glu Ala Asp Cys Met Asp Val Asn Val Arg
 1860 1865 1870
 Gly Pro Asp Gly Phe Thr Pro Leu Met Ile Ala Ser Cys Ser Gly Gly
 1875 1880 1885
 Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu Glu Asp Ala Ser Ala Asn
 1890 1895 1900
 Met Ile Ser Asp Phe Ile Gly Gln Gly Ala Gln Leu His Asn Gln Thr
 1905 1910 1915 1920
 Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg Tyr Ala Arg
 1925 1930 1935
 Ala Asp Ala Ala Lys Arg Leu Leu Glu Ser Ser Ala Asp Ala Asn Val
 1940 1945 1950
 Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala Ala Val Ala Ala Asp

1955				1960				1965							
Ala	Gln	Gly	Val	Phe	Gln	Ile	Leu	Ile	Arg	Asn	Arg	Ala	Thr	Asp	Leu
1970															
Asp	Ala	Arg	Met	Phe	Asp	Gly	Thr	Thr	Pro	Leu	Ile	Leu	Ala	Ala	Arg
1985															
Leu	Ala	Val	Glu	Gly	Met	Val	Glu	Glu	Leu	Ile	Asn	Ala	His	Ala	Asp
Val	Asn	Ala	Val	Asp	Glu	Phe	Gly	Lys	Ser	Ala	Leu	His	Trp	Ala	Ala
Ala	Val	Asn	Asn	Val	Asp	Ala	Ala	Ala	Val	Leu	Leu	Lys	Asn	Ser	Ala
Asn	Lys	Asp	Met	Gln	Asn	Asn	Lys	Glu	Glu	Thr	Ser	Leu	Phe	Leu	Ala
2050															
Ala	Arg	Glu	Gly	Ser	Tyr	Glu	Thr	Ala	Lys	Val	Leu	Leu	Asp	His	Tyr
2065															
Ala	Asn	Arg	Asp	Ile	Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Ile
Ala	Gln	Glu	Arg	Met	His	His	Asp	Ile	Val	His	Leu	Leu	Asp	Glu	Tyr
Asn	Leu	Val	Lys	Ser	Pro	Thr	Leu	His	Asn	Gly	Pro	Leu	Gly	Ala	Thr
Thr	Leu	Ser	Pro	Pro	Ile	Cys	Ser	Pro	Asn	Gly	Tyr	Met	Gly	Asn	Met
Lys	Pro	Ser	Val	Gln	Ser	Lys	Lys	Ala	Arg	Lys	Pro	Ser	Ile	Lys	Gly
2145															
Asn	Gly	Cys	Lys	Glu	Ala	Lys	Glu	Leu	Lys	Ala	Arg	Arg	Lys	Lys	Ser
Gln	Asp	Gly	Lys	Thr	Thr	Leu	Leu	Asp	Ser	Gly	Ser	Ser	Gly	Val	Leu
Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Thr	His	Gly	Tyr	Leu	Ser	Asp	Val
Ser	Ser	Pro	Pro	Leu	Met	Thr	Ser	Pro	Phe	Gln	Gln	Ser	Pro	Ser	Met
Pro	Leu	Asn	His	Leu	Thr	Ser	Met	Pro	Glu	Ser	Gln	Leu	Gly	Met	Asn
2225															
His	Ile	Asn	Met	Ala	Thr	Lys	Gln	Glu	Met	Ala	Ala	Gly	Ser	Asn	Arg
Met	Ala	Phe	Asp	Ala	Met	Val	Pro	Arg	Leu	Thr	His	Leu	Asn	Ala	Ser
Ser	Pro	Asn	Thr	Ile	Met	Ser	Asn	Gly	Ser	Met	His	Phe	Thr	Val	Gly
Gly	Ala	Pro	Thr	Met	Asn	Ser	Gln	Cys	Asp	Trp	Leu	Ala	Arg	Leu	Gln
Asn	Gly	Met	Val	Gln	Asn	Gln	Tyr	Asp	Pro	Ile	Arg	Asn	Gly	Ile	Gln
2305															
Gln	Gly	Asn	Ala	Gln	Gln	Ala	Gln	Ala	Leu	Gln	His	Gly	Leu	Met	Thr
Ser	Leu	His	Asn	Gly	Leu	Pro	Ala	Thr	Thr	Leu	Ser	Gln	Met	Met	Thr
Tyr	Gln	Ala	Met	Pro	Asn	Thr	Arg	Leu	Ala	Asn	Gln	Pro	His	Leu	Met
Gln	Ala	Gln	Gln	Met	Gln	Gln	Gln	Asn	Leu	Gln	Leu	His	Gln	Ser	
Met	Gln	Gln	Gln	His	His	Asn	Ser	Ser	Thr	Thr	Ser	Thr	His	Ile	Asn
2385															

Lys	Pro	Cys	Ser	245	Pro	Ser	Pro	Cys	Gln	250	Asn	Ala	Gly	Ile	Cys	255	Arg	Ser
Asn	Gly	Leu	260	Tyr	Glu	Cys	Lys	265	Cys	Pro	Lys	Gly	Phe	270	Glu	Gly	Lys	
Asn	Cys	Glu	275	Asn	Tyr	Asp	Asp	280	Cys	Leu	Gly	His	Leu	285	Cys	Gln	Asn	
Gly	Gly	Thr	290	Cys	Ile	Asp	Gly	295	Ile	Ser	Asp	Tyr	Thr	300	Cys	Arg	Cys	
305	Pro	Asn	Phe	310	Thr	Gly	Arg	315	Phe	Cys	Gln	Asp	Asp	320	Val	Asp	Glu	
Pro	Asn	Phe	325	Thr	Gly	Arg	Phe	330	Cys	Gln	Asp	Asp	Val	335	Asp	Glu	Cys	
Gln	Arg	Asp	340	His	Pro	Val	Cys	345	Gln	Asn	Gly	Ala	Thr	350	Cys	Thr	Asn	
His	Gly	Ser	355	Tyr	Ser	Cys	Ile	360	Cys	Val	Asn	Gly	Trp	365	Ala	Gly	Leu	
Cys	Ser	Asn	370	Asn	Thr	Asp	Asp	375	Cys	Lys	Gln	Ala	Ala	380	Cys	Phe	Tyr	
Ala	Thr	Cys	385	Ile	Asp	Gly	Val	390	Gly	Ser	Phe	Tyr	Cys	395	Gln	Cys	Thr	
Gly	Lys	Thr	405	Gly	Leu	Leu	Cys	410	His	Leu	Asp	Asp	Ala	415	Cys	Thr	Ser	
Pro	Cys	His	420	Ala	Asp	Ala	Ile	425	Cys	Asp	Thr	Ser	Pro	430	Ile	Asn	Gly	
Tyr	Ala	Cys	435	Ser	Cys	Ala	Thr	440	Gly	Tyr	Lys	Gly	Val	445	Asp	Cys	Ser	
Asp	Ile	Asp	450	Glu	Cys	Asp	Gln	455	Gly	Ser	Pro	Cys	Glu	460	His	Asn	Gly	
Cys	Val	Asn	465	Thr	Pro	Gly	Ser	470	Tyr	Arg	Cys	Asn	Cys	475	Ser	Gln	Gly	
Thr	Gly	Pro	485	Arg	Cys	Glu	Thr	490	Asn	Ile	Asn	Glu	Cys	495	Glu	Ser	His	
Cys	Gln	Asn	500	Glu	Gly	Ser	Cys	505	Leu	Asp	Pro	Gly	Thr	510	Phe	Arg	Cys	
Val	Cys	Met	515	Pro	Gly	Phe	Thr	520	Gly	Thr	Gln	Cys	Glu	525	Ile	Asp	Ile	
Glu	Cys	Gln	530	Ser	Asn	Pro	Cys	535	Leu	Asn	Asp	Gly	Thr	540	Cys	His	Asp	
Ile	Asn	Gly	545	Phe	Lys	Cys	Ser	550	Cys	Ala	Leu	Gly	Phe	555	Thr	Gly	Ala	
Cys	Gln	Ile	565	Asn	Ile	Asp	Asp	570	Cys	Gln	Ser	Gln	Pro	575	Cys	Arg	Asn	
Gly	Ile	Cys	580	His	Asp	Ser	Ile	585	Ala	Gly	Tyr	Ser	Cys	590	Glu	Cys	Pro	
Gly	Tyr	Thr	595	Gly	Thr	Ser	Cys	600	Glu	Ile	Asn	Ile	Asn	605	Asp	Cys	Asp	
Asn	Pro	Cys	610	His	Arg	Gly	Lys	615	Cys	Ile	Asp	Asp	Val	620	Asn	Ser	Phe	
Cys	Leu	Cys	625	Asp	Pro	Gly	Tyr	630	Thr	Gly	Tyr	Ile	Cys	635	Gln	Lys	Gln	
Asn	Glu	Cys	645	Glu	Ser	Asn	Pro	650	Cys	Gln	Phe	Asp	Gly	655	His	Cys	Gln	
Arg	Val	Gly	660	Ser	Tyr	Tyr	Cys	665	Gln	Cys	Gln	Ala	Gly	670	Thr	Ser	Gly	
Asn	Cys	Glu	675	Val	Asn	Val	Asn	680	Glu	Cys	His	Ser	Asn	685	Pro	Cys	Asn	

Gly	Ala	Thr	Cys	Ile	Asp	Gly	Ile	Asn	Ser	Tyr	Lys	Cys	Gln	Cys	Val
690						695					700				
Pro	Gly	Phe	Thr	Gly	Gln	His	Cys	Glu	Lys	Asn	Val	Asp	Glu	Cys	Ile
705					710					715					720
Ser	Ser	Pro	Cys	Ala	Asn	Asn	Gly	Val	Cys	Ile	Asp	Gln	Val	Asn	Gly
				725					730					735	
Tyr	Lys	Cys	Glu	Cys	Pro	Arg	Gly	Phe	Tyr	Asp	Ala	His	Cys	Leu	Ser
			740					745					750		
Asp	Val	Asp	Glu	Cys	Ala	Ser	Asn	Pro	Cys	Val	Asn	Glu	Gly	Arg	Cys
		755					760					765			
Glu	Asp	Gly	Ile	Asn	Glu	Phe	Ile	Cys	His	Cys	Pro	Pro	Gly	Tyr	Thr
	770					775					780				
Gly	Lys	Arg	Cys	Glu	Leu	Asp	Ile	Asp	Glu	Cys	Ser	Ser	Asn	Pro	Cys
785					790					795					800
Gln	His	Gly	Gly	Thr	Cys	Tyr	Asp	Lys	Leu	Asn	Ala	Phe	Ser	Cys	Gln
				805					810					815	
Cys	Met	Pro	Gly	Tyr	Thr	Gly	Gln	Lys	Cys	Glu	Thr	Asn	Ile	Asp	Asp
			820					825					830		
Cys	Val	Thr	Asn	Pro	Cys	Gly	Asn	Gly	Gly	Thr	Cys	Ile	Asp	Lys	Val
		835					840					845			
Asn	Gly	Tyr	Lys	Cys	Val	Cys	Lys	Val	Pro	Phe	Thr	Gly	Arg	Asp	Cys
	850					855					860				
Glu	Ser	Lys	Met	Asp	Pro	Cys	Ala	Arg	Asn	Arg	Cys	Lys	Asn	Glu	Ala
865					870					875					880
Lys	Cys	Thr	Pro	Ser	Ser	Asn	Phe	Leu	Asp	Phe	Ser	Cys	Thr	Cys	Lys
				885					890					895	
Leu	Gly	Tyr	Thr	Gly	Arg	Tyr	Cys	Asp	Glu	Asp	Ile	Asp	Glu	Cys	Ser
			900					905					910		
Leu	Ser	Ser	Pro	Cys	Arg	Asn	Gly	Ala	Ser	Cys	Leu	Asn	Val	Pro	Gly
		915					920					925			
Ser	Tyr	Arg	Cys	Leu	Cys	Thr	Lys	Gly	Tyr	Glu	Gly	Arg	Asp	Cys	Ala
	930					935					940				
Ile	Asn	Thr	Asp	Asp	Cys	Ala	Ser	Phe	Pro	Cys	Gln	Asn	Gly	Arg	Thr
945					950					955					960
Cys	Leu	Asp	Gly	Ile	Gly	Asp	Tyr	Ser	Cys	Leu	Cys	Val	Asp	Gly	Phe
				965					970					975	
Asp	Gly	Lys	His	Cys	Glu	Thr	Asp	Ile	Asn	Glu	Cys	Leu	Ser	Gln	Pro
			980					985					990		
Cys	Gln	Asn	Gly	Ala	Thr	Cys	Ser	Gln	Tyr	Val	Asn	Ser	Tyr	Thr	Cys
		995					1000					1005			
Thr	Cys	Pro	Leu	Gly	Phe	Ser	Gly	Ile	Asn	Cys	Gln	Thr	Asn	Asp	Glu
	1010					1015					1020				
Asp	Cys	Thr	Glu	Ser	Ser	Cys	Leu	Asn	Gly	Gly	Ser	Cys	Ile	Asp	Gly
1025					1030					1035					1040
Ile	Asn	Gly	Tyr	Asn	Cys	Ser	Cys	Leu	Ala	Gly	Tyr	Ser	Gly	Ala	Asn
				1045					1050					1055	
Cys	Gln	Tyr	Lys	Leu	Asn	Lys	Cys	Asp	Ser	Asn	Pro	Cys	Leu	Asn	Gly
			1060					1065					1070		
Ala	Thr	Cys	His	Glu	Gln	Asn	Asn	Glu	Tyr	Thr	Cys	His	Cys	Pro	Ser
		1075					1080					1085			
Gly	Phe	Thr	Gly	Lys	Gln	Cys	Ser	Glu	Tyr	Val	Asp	Trp	Cys	Gly	Gln
	1090					1095					1100				
Ser	Pro	Cys	Glu	Asn	Gly	Ala	Thr	Cys	Ser	Gln	Met	Lys	His	Gln	Phe
1105					1110					1115					1120
Ser	Cys	Lys	Cys	Ser	Ala	Gly	Trp	Thr	Gly	Lys	Leu	Cys	Asp	Val	Gln

				1125					1130				1135		
Thr	Ile	Ser	Cys	Gln	Asp	Ala	Ala	Asp	Arg	Lys	Gly	Leu	Ser	Leu	Arg
			1140					1145					1150		
Gln	Leu	Cys	Asn	Asn	Gly	Thr	Cys	Lys	Asp	Tyr	Gly	Asn	Ser	His	Val
		1155					1160					1165			
Cys	Tyr	Cys	Ser	Gln	Gly	Tyr	Ala	Gly	Ser	Tyr	Cys	Gln	Lys	Glu	Ile
	1170				1175			1180							
Asp	Glu	Cys	Gln	Ser	Gln	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Arg	Asp
1185				1190				1195						1200	
Leu	Ile	Gly	Ala	Tyr	Glu	Cys	Gln	Cys	Arg	Gln	Gly	Phe	Gln	Gly	Gln
			1205					1210					1215		
Asn	Cys	Glu	Leu	Asn	Ile	Asp	Asp	Cys	Ala	Pro	Asn	Pro	Cys	Gln	Asn
		1220						1225					1230		
Gly	Gly	Thr	Cys	His	Asp	Arg	Val	Met	Asn	Phe	Ser	Cys	Ser	Cys	Pro
		1235					1240					1245			
Pro	Gly	Thr	Met	Gly	Ile	Ile	Cys	Glu	Ile	Asn	Lys	Asp	Asp	Cys	Lys
	1250				1255			1260							
Pro	Gly	Ala	Cys	His	Asn	Asn	Gly	Ser	Cys	Ile	Asp	Arg	Val	Gly	Gly
1265				1270				1275						1280	
Phe	Glu	Cys	Val	Cys	Gln	Pro	Gly	Phe	Val	Gly	Ala	Arg	Cys	Glu	Gly
			1285					1290					1295		
Asp	Ile	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Ser	Asn	Ala	Gly	Thr	Leu
		1300						1305					1310		
Asp	Cys	Val	Gln	Leu	Val	Asn	Asn	Tyr	His	Cys	Asn	Cys	Arg	Pro	Gly
	1315					1320						1325			
His	Met	Gly	Arg	His	Cys	Glu	His	Lys	Val	Asp	Phe	Cys	Ala	Gln	Ser
	1330					1335					1340				
Pro	Cys	Gln	Asn	Gly	Gly	Asn	Cys	Asn	Ile	Arg	Gln	Ser	Gly	His	His
1345				1350				1355						1360	
Cys	Ile	Cys	Asn	Asn	Gly	Phe	Tyr	Gly	Lys	Asn	Cys	Glu	Leu	Ser	Gly
			1365					1370					1375		
Gln	Asp	Cys	Asp	Ser	Asn	Pro	Cys	Arg	Val	Gly	Asn	Cys	Val	Val	Ala
		1380						1385					1390		
Asp	Glu	Gly	Phe	Gly	Tyr	Arg	Cys	Glu	Cys	Pro	Arg	Gly	Thr	Leu	Gly
	1395						1400					1405			
Glu	His	Cys	Glu	Ile	Asp	Thr	Leu	Asp	Glu	Cys	Ser	Pro	Asn	Pro	Cys
	1410				1415						1420				
Ala	Gln	Gly	Ala	Ala	Cys	Glu	Asp	Leu	Leu	Gly	Asp	Tyr	Glu	Cys	Leu
1425			1430					1435						1440	
Cys	Pro	Ser	Lys	Trp	Lys	Gly	Lys	Arg	Cys	Asp	Ile	Tyr	Asp	Ala	Asn
			1445					1450					1455		
Tyr	Pro	Gly	Trp	Asn	Gly	Gly	Ser	Gly	Ser	Gly	Asn	Asp	Arg	Tyr	Ala
	1460							1465					1470		
Ala	Asp	Leu	Glu	Gln	Gln	Arg	Ala	Met	Cys	Asp	Lys	Arg	Gly	Cys	Thr
	1475					1480						1485			
Glu	Lys	Gln	Gly	Asn	Gly	Ile	Cys	Asp	Ser	Asp	Cys	Asn	Thr	Tyr	Ala
	1490				1495					1500					
Cys	Asn	Phe	Asp	Gly	Asn	Asp	Cys	Ser	Leu	Gly	Ile	Asn	Pro	Trp	Ala
1505				1510				1515						1520	
Asn	Cys	Thr	Ala	Asn	Glu	Cys	Trp	Asn	Lys	Phe	Lys	Asn	Gly	Lys	Cys
			1525					1530					1535		
Asn	Glu	Glu	Cys	Asn	Asn	Ala	Ala	Cys	His	Tyr	Asp	Gly	His	Asp	Cys
	1540					1545						1550			
Glu	Arg	Lys	Leu	Lys	Ser	Cys	Asp	Thr	Leu	Phe	Asp	Ala	Tyr	Cys	Gln
	1555					1560						1565			

Lys His Tyr Gly Asp Gly Phe Cys Asp Tyr Gly Cys Asn Asn Ala Glu
 1570 1575 1580
 Cys Ser Trp Asp Gly Leu Asp Cys Glu Asn Lys Thr Gln Ser Pro Val
 1585 1590 1595 1600
 Leu Ala Glu Gly Ala Met Ser Val Val Met Leu Met Asn Val Glu Ala
 1605 1610 1615
 Phe Arg Glu Ile Gln Ala Gln Phe Leu Arg Asn Met Ser His Met Leu
 1620 1625 1630
 Arg Thr Thr Val Arg Leu Lys Lys Asp Ala Leu Gly His Asp Ile Ile
 1635 1640 1645
 Ile Asn Trp Lys Asp Asn Val Arg Val Pro Glu Ile Glu Asp Thr Asp
 1650 1655 1660
 Phe Ala Arg Lys Asn Lys Ile Leu Tyr Thr Gln Gln Val His Gln Thr
 1665 1670 1675 1680
 Gly Ile Gln Ile Tyr Leu Glu Ile Asp Asn Arg Lys Cys Thr Glu Cys
 1685 1690 1695
 Phe Thr His Ala Val Glu Ala Ala Glu Phe Leu Ala Ala Thr Ala Ala
 1700 1705 1710
 Lys His Gln Leu Arg Asn Asp Phe Gln Ile His Ser Val Arg Gly Ile
 1715 1720 1725
 Lys Asn Pro Gly Asp Glu Asp Asn Gly Glu Pro Pro Ala Asn Val Lys
 1730 1735 1740
 Tyr Val Ile Thr Gly Ile Ile Leu Val Ile Ile Ala Leu Ala Phe Phe
 1745 1750 1755 1760
 Gly Met Val Leu Ser Thr Gln Arg Lys Arg Ala His Gly Val Thr Trp
 1765 1770 1775
 Phe Pro Glu Gly Phe Arg Ala Pro Ala Ala Val Met Ser Arg Arg Arg
 1780 1785 1790
 Arg Asp Pro His Gly Gln Glu Met Arg Asn Leu Asn Lys Gln Val Ala
 1795 1800 1805
 Met Gln Ser Gln Gly Val Gly Gln Pro Gly Ala His Thr Ser Asp Asp
 1810 1815 1820
 Glu Ser Asp Met Pro Leu Pro Lys Arg Gln Arg Ser Asp Pro Val Ser
 1825 1830 1835 1840
 Gly Val Gly Leu Gly Asn Asn Gly Gly Tyr Ala Ser Asp His Thr Met
 1845 1850 1855
 Val Ser Glu Tyr Glu Glu Ala Asp Gln Arg Val Trp Ser Gln Ala His
 1860 1865 1870
 Leu Asp Val Val Asp Val Arg Ala Ile Met Thr Pro Pro Ala His Gln
 1875 1880 1885
 Asp Gly Gly Lys His Asp Val Asp Ala Arg Gly Pro Cys Gly Leu Thr
 1890 1895 1900
 Pro Leu Met Ile Ala Ala Val Arg Gly Gly Gly Leu Asp Thr Gly Glu
 1905 1910 1915 1920
 Asp Ile Glu Asn Asn Glu Asp Ser Thr Ala Gln Val Ile Ser Asp Leu
 1925 1930 1935
 Leu Ala Gln Gly Ala Glu Leu Asn Ala Thr Met Asp Lys Thr Gly Glu
 1940 1945 1950
 Thr Ser Leu His Leu Ala Ala Arg Phe Ala Arg Ala Asp Ala Ala Lys
 1955 1960 1965
 Arg Leu Phe His Ala Gly Ala Asp Ala Asn Cys Gln Asp Asn Thr Gly
 1970 1975 1980
 Arg Thr Pro Leu His Ala Ala Val Ala Ala Asp Ala Met Gly Val Phe
 1985 1990 1995 2000
 Gln Ile Leu Leu Arg Asn Arg Ala Thr Asn Leu Asn Ala Arg Met His

				2005				2010				2015			
Asp	Gly	Thr	Thr	Pro	Leu	Ile	Leu	Ala	Ala	Arg	Leu	Ala	Ile	Glu	Gly
			2020								2025				2030
Met	Val	Glu	Asp	Leu	Ile	Thr	Ala	Asp	Ala	Asp	Ile	Asn	Ala	Ala	Asp
		2035					2040							2045	
Asn	Ser	Gly	Lys	Thr	Ala	Leu	His	Trp	Ala	Ala	Ala	Val	Asn	Asn	Thr
	2050					2055					2060				
Glu	Ala	Val	Asn	Ile	Leu	Met	His	His	Ala	Asn	Arg	Asp	Ala	Gln	
2065					2070					2075					2080
Asp	Asp	Lys	Asp	Glu	Thr	Pro	Leu	Phe	Leu	Ala	Ala	Arg	Glu	Gly	Ser
			2085						2090					2095	
Tyr	Glu	Ala	Cys	Lys	Ala	Leu	Leu	Asp	Asn	Phe	Ala	Asn	Arg	Glu	Ile
			2100						2105					2110	
Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Val	Ala	Ser	Glu	Arg	Leu
		2115					2120						2125		
His	His	Asp	Ile	Val	Arg	Leu	Leu	Asp	Glu	His	Val	Pro	Arg	Ser	Pro
	2130					2135					2140				
Gln	Met	Leu	Ser	Met	Thr	Pro	Gln	Ala	Met	Ile	Gly	Ser	Pro	Pro	Pro
2145					2150					2155					2160
Gly	Gln	Gln	Gln	Pro	Gln	Leu	Ile	Thr	Gln	Pro	Thr	Val	Ile	Ser	Ala
			2165						2170					2175	
Gly	Asn	Gly	Gly	Asn	Asn	Gly	Asn	Gly	Asn	Ala	Ser	Gly	Lys	Gln	Ser
			2180				2185						2190		
Asn	Gln	Thr	Ala	Lys	Gln	Lys	Ala	Ala	Lys	Lys	Ala	Lys	Leu	Ile	Glu
		2195					2200						2205		
Gly	Ser	Pro	Asp	Asn	Gly	Leu	Asp	Ala	Thr	Gly	Ser	Leu	Arg	Arg	Lys
	2210					2215					2220				
Ala	Ser	Ser	Lys	Lys	Thr	Ser	Ala	Ala	Ser	Lys	Lys	Ala	Ala	Asn	Leu
2225					2230					2235					2240
Asn	Gly	Leu	Asn	Pro	Gly	Gln	Leu	Thr	Gly	Gly	Val	Ser	Gly	Val	Pro
			2245						2250					2255	
Gly	Val	Pro	Pro	Thr	Asn	Ser	Ala	Val	Gln	Ala	Ala	Ala	Ala	Ala	Ala
			2260						2265					2270	
Ala	Ala	Val	Ala	Ala	Met	Ser	His	Glu	Leu	Glu	Gly	Ser	Pro	Val	Gly
		2275					2280						2285		
Val	Gly	Met	Gly	Gly	Asn	Leu	Pro	Ser	Pro	Tyr	Asp	Thr	Ser	Ser	Met
	2290					2295					2300				
Tyr	Ser	Asn	Ala	Met	Ala	Ala	Pro	Leu	Ala	Asn	Gly	Asn	Pro	Asn	Thr
2305					2310					2315					2320
Gly	Ala	Lys	Gln	Pro	Pro	Ser	Tyr	Glu	Asp	Cys	Ile	Lys	Asn	Ala	Gln
			2325						2330					2335	
Ser	Met	Gln	Ser	Leu	Gln	Gly	Asn	Gly	Leu	Asp	Met	Ile	Lys	Leu	Asp
			2340				2345						2350		
Asn	Tyr	Ala	Tyr	Ser	Met	Gly	Ser	Pro	Phe	Gln	Gln	Glu	Leu	Leu	Asn
		2355					2360						2365		
Gly	Gln	Gly	Leu	Gly	Met	Asn	Gly	Asn	Gly	Gln	Arg	Asn	Gly	Val	Gly
	2370					2375					2380				
Pro	Gly	Val	Leu	Pro	Gly	Leu	Cys	Gly	Met	Gly	Gly	Leu	Ser	Gly	
2385					2390				2395						2400
Ala	Gly	Asn	Gly	Asn	Ser	Arg	Glu	Gln	Gly	Leu	Ser	Pro	Pro	Tyr	Ser
			2405						2410					2415	
Asn	Gln	Ser	Pro	Pro	His	Ser	Val	Gln	Ser	Ser	Leu	Ala	Leu	Ser	Pro
			2420						2425				2430		
His	Ala	Tyr	Leu	Gly	Ser	Pro	Ser	Pro	Ala	Lys	Ser	Leu	Pro	Ser	Leu
		2435					2440						2445		

Pro	Thr	Ser	Pro	Thr	His	Ile	Gln	Ala	Met	Arg	His	Ala	Thr	Gln	Gln	2450	2455	2460
Lys	Gln	Phe	Gly	Gly	Ser	Asn	Leu	Asn	Ser	Leu	Leu	Gly	Gly	Ala	Asn	2465	2470	2475
Gly	Gly	Gly	Val	Val	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Val	Gly	2485	2490	2495
Gln	Gly	Pro	Gln	Asn	Ser	Pro	Val	Ser	Leu	Gly	Ile	Ile	Ser	Pro	Thr	2500	2505	2510
Gly	Ser	Asp	Met	Gly	Ile	Met	Leu	Ala	Pro	Pro	Gln	Ser	Ser	Lys	Asn	2515	2520	2525
Ser	Ala	Ile	Met	Gln	Thr	Ile	Ser	Pro	Gln	Gln	Gln	Gln	Gln	Gln	Gln	2530	2535	2540
Gln	Gln	Gln	Gln	Gln	Gln	His	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	2545	2550	2555
Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Leu	Gly	Gly	Leu	Glu	Phe	Gly	2565	2570	2575
Ala	Gly	Leu	Asp	Leu	Asn	Gly	Phe	Cys	Gly	Ser	Pro	Asp	Ser	Phe	His	2580	2585	2590
Ser	Gly	Gln	Met	Asn	Pro	Pro	Ser	Ile	Gln	Ser	Ser	Met	Ser	Gly	Ser	2595	2600	2605
Ser	Pro	Ser	Thr	Asn	Met	Leu	Ser	Pro	Ser	Ser	Gln	His	Asn	Gln	Gln	2610	2615	2620
Ala	Phe	Tyr	Gln	Tyr	Leu	Thr	Pro	Ser	Ser	Gln	His	Ser	Gly	Gly	His	2625	2630	2635
Thr	Pro	Gln	His	Leu	Val	Gln	Thr	Leu	Asp	Ser	Tyr	Pro	Thr	Pro	Ser	2645	2650	2655
Pro	Glu	Ser	Pro	Gly	His	Trp	Ser	Ser	Ser	Ser	Pro	Arg	Ser	Asn	Ser	2660	2665	2670
Asp	Trp	Ser	Glu	Gly	Val	Gln	Ser	Pro	Ala	Ala	Asn	Asn	Leu	Tyr	Ile	2675	2680	2685
Ser	Gly	Gly	His	Gln	Ala	Asn	Lys	Gly	Ser	Glu	Ala	Ile	Tyr	Ile		2690	2695	2700